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A dashboard and Geographic Decentralization Score
for blockchain networks

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John Hoopes ⊙ Adam Spiers ⊙ **ETHGlobal Buenos Aires** ⊙ **November 2025**
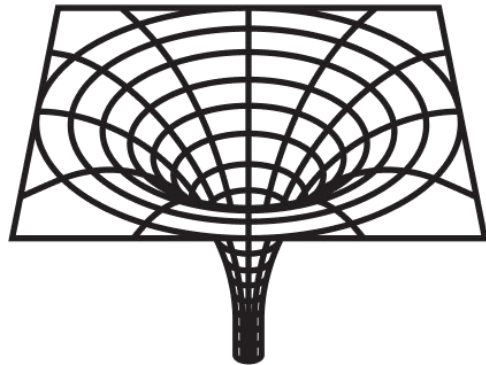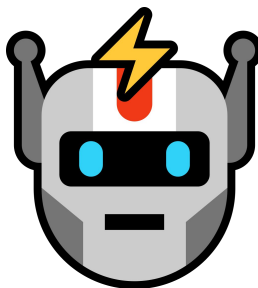
PROBLEMS
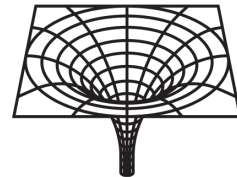
Not geographically
decentralized?

Not decentralized.

MEV latency games
incentivize
geocentralization
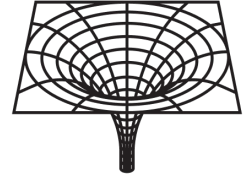
Most networks
*don't know where
their nodes are even
running*

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OPPORTUNITY

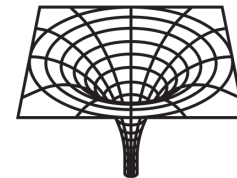| Lots of great research measuring network geographies	No unified metric to understand the geography of blockchains	Calls to make Ethereum alignment **legible**

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CHALLENGE

Complexity, unclear purpose, and a risk of oversimplifying

False precision misleads, and might result in mismanagement

**Currently*, unverifiable "best effort" signals (like IP) are all we have**

28.523457182°N, 80.683094159°W	"HEY, CHECK OUT THIS SPECIFIC SAND GRAIN!"
28.523457182818284°N, 80.683094159265358°W	EITHER YOU'RE HANDING OUT RAW FLOATING POINT VARIABLES, OR YOU'VE BUILT A DATABASE TO TRACK INDIVIDUAL ATOMS. IN EITHER CASE, PLEASE STOP.

Geo 🌐 IP

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GDI: GEOGRAPHIC DECENTRALIZATION INDEX
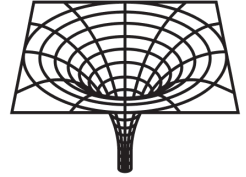
An open, community-governed methodology

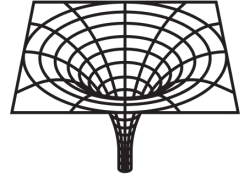Measure + model network geography + geospatial risk factors

Open data, open code, open interfaces

Three sub-indices

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GDI: SUB-INDICES

Physical Distribution Index (PDI)

Jurisdictional Diversity Index (JDI)

Infrastructure Heterogeneity Index (IHI)

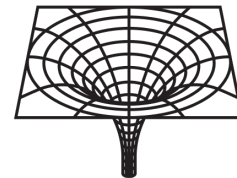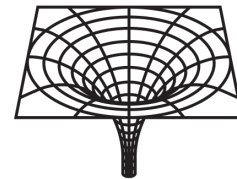*Proposal here*

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A dashboard visualizing maps, metrics + insights

A growing list of supported networks

Make Geography Legible (for the first time)

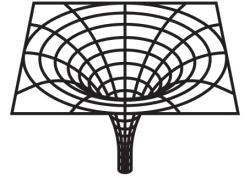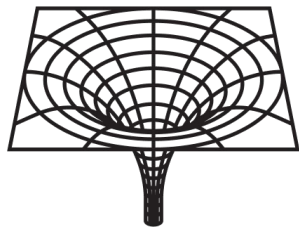✦✧ Astral

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DEMO

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MORE TO BUILD

Research, build pipelines, add more networks	**Help networks decentralized meaningfully**	**Improve location verification (with Astral location proofs 😉)**

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Telegram!

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